

# HP StorageWorks Fibre Channel Disk Drive Replacement Instructions

These instructions apply to the EVA 3000/5000 and the EVA 4000/6000/8000 product families. The part may also be used in other HP products. Please refer to documentation for your specific product for detailed replacement instructions.

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## Warranty Information

If the product in which this part is being replaced is still under HP warranty, then the replacement part(s) referred to in these Replacement Instructions is provided under the terms and conditions of the Hewlett-Packard Company Limited Warranty for that product. A copy of this Limited Warranty may be viewed at: <http://h18006.www1.hp.com/products/storageworks/warranty.html>

If this is a trade sale part (product out of warranty), then the replacement part(s) referred to in these Replacement Instructions is provided under HP's express limited warranty statement, which may be viewed at: <http://www.hp.com/go/storagewarranty>

The replacement part takes on either the Limited Warranty Period of the part being replaced or a ninety-day period that begins upon installation of the replacement part, whichever is greater.

The only warranty for this replacement product is as noted above. Nothing in these replacement instructions should be construed as constituting an additional warranty. The information provided in these replacement instructions is provided "AS IS" and HP is not liable for technical or editorial errors or omissions contained herein.

## About This Document

This document describes the procedure for replacing the Fibre Channel disk drive used in the EVA products.

## Before you begin

Observe the following precautions when replacing the disk.

### ⚠ CAUTION:

Make sure you have a replacement part available before removing the failed component. Removing a component impacts cooling within the enclosure.

Do not remove more than one disk at a time from the enclosure. Doing so will impact cooling of the enclosure and may cause data loss.

Parts can be damaged by electrostatic discharge. Use proper anti-static protection. Refer to the documentation that shipped with your system for additional information.

Have a copy of the product User Guide available for reference. You can download a copy of the User Guide from the product support page on the HP web site.


## Disk replacement video

To assist you in replacing the disk, a replacement video has been produced. You can view the video at the following web site. The same procedure is used for EVA3000/5000 and EVA4000/6000/8000 products.

<http://www.thesml.com/csr.htm?prodSeriesId=470490>

## Types of disk failures

There are two types of disk failures:

- Hard failure - the disk is no longer functioning properly and has been assigned a failed status. This type of failure is indicated by an operational state of  Failed in Command View EVA. The amber fault status indicator on the disk is typically on.

- Impending failure - although the disk is still functioning, errors have been detected that indicate an impending failure. This type of failure is not accompanied by a failed status.

### △ CAUTION:

A disk with an impending failure will appear to be operating normally in Command View EVA, and the fault light on the disk will not be on. Therefore, it is important the disk be positively identified before performing the replacement. Make sure you work with the HP Solution Center to ensure you identify the correct disk for replacement.

## Checking system redundancy

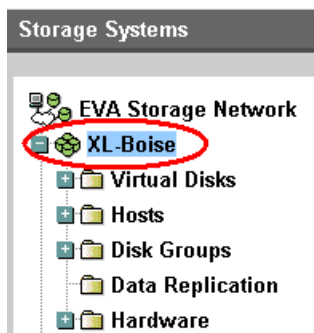
Before replacing a disk, you should check the redundancy status of the entire storage system to ensure a disk can be removed without impacting data availability.

### △ CAUTION:

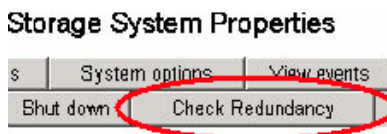
Do not proceed with the disk replacement until you are certain the storage system is redundant.

1. Open HP Command View EVA and click the icon of the storage system you want to check. See [Figure 1](#).
2. On the Initialized Storage System Properties page, click **Check Redundancy**. See [Figure 2](#).
3. If the system is redundant, continue with [Verifying component failure](#).

If the system is not redundant, information is displayed indicating the cause of the lack of redundancy. Refer to online help for help in interpreting the information displayed. In this situation, work with your HP call center agent to determine how to proceed.



**Figure 1** Selecting a storage system



**Figure 2** Checking redundancy

## Verifying component failure

Before replacing a disk, use the following methods to verify the component failure:

### △ CAUTION:

If Command View EVA does not present a status consistent with that of the disk status indicators, or if Command View or Instant Support Enterprise Edition (ISEE) indicates multiple hardware failures, contact HP support for assistance. The HP support web site is located at <http://www.hp.com/support>

- Analyze any failure messages you may have received from system monitoring (ISEE). Error messages identify each disk by its rack, enclosure, bay, and UUID (World Wide Name). Record this information to assist you in identifying the correct disk before replacing it.

The following is a sample of the disk identification information:


```
FRU List:
Storage System Name:   EVA_1
Storage System World Wide ID: 5000-1FE1-0015-42A0
```

```
Disk Drive UUID:   2000-0000-871D-FE60
```

```
Drive Location ---
Enclosure ID:      8
Bay ID:            1
Rack Number:       0
```

### NOTE:

The Disk Drive UUID corresponds to the disk Node World Wide Name displayed in Command View.

- Check the disk status indicators. See [Figure 3](#). If a hard failure has occurred, the Fault indicator should be On.
- Check disk status using Command View EVA:
  1. In the Navigation pane, select **Storage system > Hardware > Rack > Disk enclosure > Bay**. Use the information from the error message to guide you to the correct disk.
  2. In the Content pane, select the **Disk Drive** tab.
  3. Check the disk Node World Wide Name against the error message UUID information recorded earlier to ensure you have selected the correct disk. See [Figure 4](#).
  4. Check the disk operational state. If a hard failure has occurred, the operational state should be  Failed. A disk with an impending failure indicates Good status and will continue to do so until the condition of the disk degrades enough to become a hard failure.
  5. Check the following conditions.

### △ CAUTION:

The following conditions must all have the indicated states before the disk is removed.

- Requested usage - Ungrouped. See [Figure 6](#).
- Actual usage - Ungrouped. See [Figure 6](#).

If all the above conditions are met, continue with [Step 7](#). If the disk needs to be ungrouped, continue with the following step.

### NOTE:

If the above conditions are not met after attempting to ungroup the disk, contact your HP-authorized service representative for assistance.

6. For an impending failure, it will be necessary to ungroup the disk as follows before it can be removed.

- a. Click **Ungroup**.
- b. Click **Ungroup in background**.

△ **CAUTION:**

When selecting **Ungroup in background**, a dialog is displayed indicating the Operation succeeded. This indicates that the ungroup operation has been initiated. You can monitor the progress of the ungroup on the Disk Drive Properties page.

- c. Click the **Disk Drive** tab and monitor the ungroup progress. When the ungroup is complete, continue with the next step.
  - If you are running XCS v6.000 or later, monitor the **Migration progress** field. See Figure 5.
  - If you are running an earlier version of XCS or any version of VCS, monitor the **Requested usage** field and the **Actual usage** field. The status of both fields will indicate Ungrouped when the process is complete.

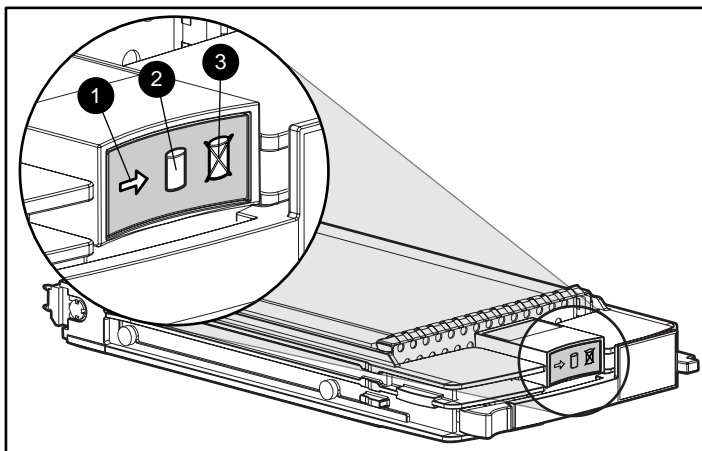
📝 **NOTE:**

The ungrouping process may take up to several hours to complete. The time depends on the capacity of the disk and the level of storage system activity.

7. Click **Remove** to prepare the disk for removal. The status indicators on the disk will begin flashing to help you locate the disk. The disk can now be removed following the steps in [Removing a disk](#).

📝 **NOTE:**

Certain hard disk failures result in a status of *Drive unmated*, and disable the **Remove** button. In this situation, the disk can be immediately removed from the enclosure. The fault indicator will be on to help locate the failed disk.



**Figure 3 Disk status indicators**

1. Activity
2. Online
3. Fault

Identification	
Name:	Disk 012
Loop Pair:	LoopPair1
Node World Wide Name:	2000-000C-5053-3F97
UID:	2000-000c-5053-3f97-0000-0000-0000-0000

**Figure 4 Checking Node World Wide Name**

Condition/State	
Operational state:	⚠️ Operation in progress
Migration state:	⚠️ Ungrouping
Migration progress:	0% <div style="width: 67%; background-color: green;"></div> 100% 67% progress

**Figure 5 Monitoring ungroup progress**

System	
Requested usage:	Ungrouped
Actual usage:	Ungrouped
Disk group:	n/a
Occupancy:	0.00 GB
RSS ID:	n/a
RSS index:	n/a

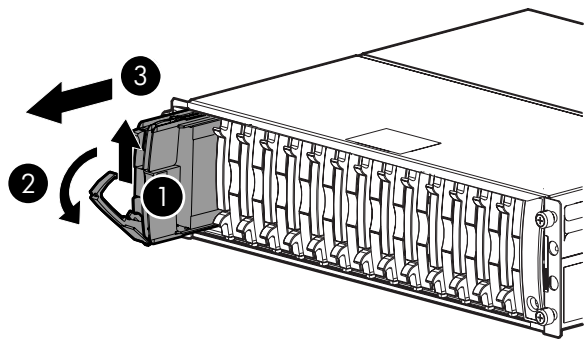
**Figure 6 Checking disk group status**

## Removing a disk

△ **CAUTION:**

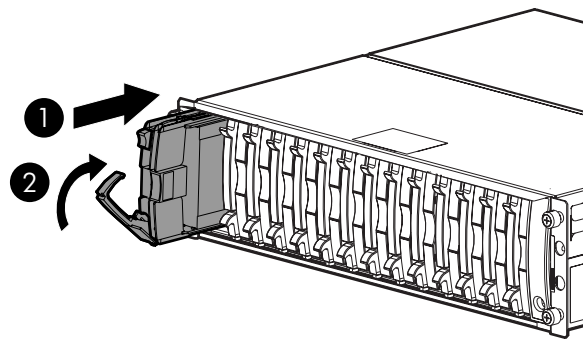
Rotating media can make the disk difficult to handle. To avoid dropping and damaging the disk, wait approximately 30 seconds for the media to stop rotating before removing the from the enclosure.

1. Push in the wine-colored ejector button (1) and pull the release lever (2) down to the full open position.
2. Pull the disk part way out of the enclosure (3) and wait for the media to stop spinning.
3. When the media has stopped spinning, remove the disk from the enclosure.



0115a

**Figure 7 Removing a disk**



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**Figure 8 Installing a disk**

## Changing the Device Addition Policy

To prevent the storage system from automatically grouping a new disk that may have the incorrect firmware on it, the Device Addition Policy must be checked and set to manual if necessary:

1. In the Command View Navigation pane, select the storage system.  
The Initialized Storage System Properties window opens.
2. Click **System Options**
3. Select **Set system operational policies**
4. If the Device Addition Policy is set to **Automatic**, change it to **Manual**
5. Click **Save changes**



### NOTE:

If you want to return the Device Addition Policy to automatic, use the above procedure to do so after verifying the disk has the correct firmware version.

## Installing a disk

1. Push in the ejector button on the disk and pull the release lever down to the full open position.
2. Insert the disk into the enclosure as far as it will go (1).
3. Close the release lever until it engages the ejector button, and the disk seats in the backplane (2).
4. Press in firmly on the disk to ensure it is seated properly.

## Verifying proper operation

After replacing the disk, check the following to verify that the disk is operating normally:



### NOTE:

It may take up to 10 minutes for the component to display good status.

- Check the disk status indicators. See [Figure 3](#).
  - Activity indicator (1) should be on or flashing
  - Online indicator (2) should be on or flashing
  - Fault indicator (3) should be off
- Check the following using Command View EVA.
  - Navigate back to the component and check the operational state. It should be
  - Ensure the disk is using the correct firmware. Record the **Model number** and the **Firmware version** of the disk. See [Figure 9](#). Check the firmware version against the supported disk firmware in the *HP StorageWorks Enterprise Virtual Array Release Notes*. The most current edition of the release notes can be downloaded from the following web site:

<http://www.hp.com/support/manuals>

Click **Storage Array Systems** under Storage, and then select the appropriate product under Enterprise Virtual Array Systems.

If the disk is using an unsupported version of firmware, download the correct firmware from the following web site and install it using the instructions included with the firmware file. Do not add the disk to a disk group if it using an unsupported firmware version.

<http://www.hp.com/support/evadiskfirmware>



### NOTE:

When downloading the firmware, make sure you use the disk model number to locate the correct firmware file. If you have difficulty locating the correct firmware, contact your HP-authorized service representative for assistance.

Physical	
Type:	Fibre Channel Disk
Manufacturer:	HPO
Model number:	BF07255B2C
Firmware version:	HP05
Formatted capacity:	68.36 GB
Drive Type:	Online

**Figure 9 Checking model number and firmware version**

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## Adding the disk to a disk group

After replacing the disk, it should be added to a disk group. The disk is typically added back into its original disk group.

1. In the Navigation pane, select **Storage system > Hardware > Rack > Disk enclosure > Bay**
2. In the Content pane, select the **Disk Drive** tab.
3. Click **Group** to initiate the process for adding the disk to a disk group.

**Operation Successful** is displayed indicating the disk is now grouped, leveling has been initiated, and the storage system begins immediately using the disk.



### NOTE:

If the Device Addition Policy is set to automatic, the disk will automatically be added to a disk group. In this case the **Group** option will not be available.

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## Returning the failed component

Please follow the return instructions provided with the new component.